

REMARKS

Claims 1 and 8 remain in the application with claim 1 having been amended hereby and claims 2-4 having been cancelled, without prejudice or disclaimer.

The cancellation of claim 4 renders moot the rejection thereof under 35 USC 112, second paragraph.

Reconsideration is respectfully requested of the rejection of claims 1, 4, and 8 under 35 USC 102(e), as being anticipated by Matsuo et al.

The present invention is intended to provide a processing system for processing audio signals for playback over headphones. A feature of the present invention is a two-tier signal processing approach in which a first signal processing section converts stereo audio signals into binaural signals using the so-called head related transfer functions, and the second processing section consists of left and right characteristic processing sections that correct for the individual characteristics of the speaker units of the headphones. In a further embodiment of the present invention, it is recognized that quite possibly two different kinds of headphones will be made available for use with the signal processing sections, such as the additional infrared ray headphones, as shown in Fig. 4, for example.

Thus, in the embodiment shown in Fig. 5, first left and right characteristic correction sections are provided and second left and right characteristic corrections sections are provided. Because the two kinds of headphones have different

speaker unit characteristics, the characteristic correction sections are also different relative to the first left and right sections and second left and right sections. A selector is then provided to select the first or second characteristic correction sections based upon the kind of headphone that is attached to the output terminal.

Claim 1 has been amended hereby to emphasize the above-noted features of the present invention.

Matsuo et al. also relates to a system for improving the audio imaging of headphones and also provides a two-tier approach in which filters are provided for the elimination of left and right headphone channel characteristics.

Nevertheless, Matsuo et al. never describes or suggests that additional correction sections could be provided with different coefficients or different headphone characteristics.

Yamada et al. relates to a signal processing section for use with a headphone in which a head motion detector is employed to change the location of the audio image by feeding back head rotation information to the digital signal processor. Two separate output jacks are provided to which two separate digital signal processors and headphones can be connected. This permits two people watching a video image to obtain slightly different audio imaging locations, because of the difference in the head rotations of the two headphones connected to the main binaural processor. The second headphones are not shown in Yamada et al and, thus, it may be assumed that the headphones that are connected to the two

different output terminals are the same.

Thus, even combining Yamada et al. with Matsuo et al., the feature of the present invention in which different kinds of headphones are connected to the output terminals such that different characteristic correction sections are provided depending upon the kind of headphones to be attached so that the selector can select the correct characteristic correcting section, is not shown or suggested in the supposed combination.

Claim 8 depends from claim 1, which for the reasons set forth hereinabove is thought to be patentably distinct over the cited references.

Accordingly, in view of the amendments made to the claims hereby, as well as the above-remarks, it is respectfully submitted that an audio processing apparatus that can provide audio imaging with different kinds of headphones each having its own dedicated characteristic correcting section, as taught by the present invention and as recited in the amended claims, is neither shown nor suggested in the cited references, alone or in combination.

Entry of this amendment is earnestly solicited and it is respectfully submitted that this amendment raises no new issues requiring further consideration and/or search because the features of the present invention are simply rearranged from the dependent claims and emphasized in amended claim 1.

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Favorable reconsideration is earnestly solicited.

Respectfully submitted,

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